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# A New Species of the Genus *Platymantis* (Ranidae) with a List of Amphibians Known from South Gigante Island, Philippines

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### INTRODUCTION

Inger (1954), in his monograph on the amphibian fauna of the Philippine Islands, includes 31 islands from which amphibians were recorded. The number of species for the 11 major, larger islands, those over 1,000 square miles (Luzon, Mindanao, Samar, Negros, Palawan, Panay, Mindoro, Leyte, Cebu, Bohol and Masbate) ranged from 0 for Masbate, 2 for Cebu, and 3 for Bohol, to 33 for Mindanao. For the 21 lesser islands for which records were given by Inger (1954), including 4: Bongao, Jolo, Papahag, and Tawi Tawi under the general designation of Sulu Archipelago, the number of recorded amphibians ranged from 1 for Camiguin, Cagayan Province, off northern Luzon Island, Guimaras, Siargao and Sibuyan islands to 16 for Basilan. Thus, most of the smaller islands of the Philippines, many of which have suitable habitats for amphibians, were unexplored in terms of this faunal element as late as 1954.

Recent intensive exploration of Bohol and Cebu, among the major islands, has provided records of 20 amphibian species including one previously undescribed platimantid (Brown and Alcala, 1963) for the first island and 8 species for Cebu (unpublished).

During 1966 to 1968, as a part of a small-island project concerned with the diversity and zoogeography of the herpetofauna on small islands in the Philippine

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archipelago, we have surveyed 30 lesser islands in the central Visayan group and along the northern coast of Mindanao. Two of these, Siquijor and Guimaras, were included in Inger's list; the other 28 were previously unexplored. These 30 islands range in size from 1,000 square meters,  $\frac{1}{10}$  of a hectare, for Polong Dako, Bohol Province, to 35,860 hectares for Guimaris. A number of these islands have suitable habitats and are occupied by populations of one to several species of amphibians, a few of which are new species. In 1967, Brown and Alcala described a new species of *Oreophryne* from Camiguin Island, Misamis Oriental Province, off the northern Mindanao Island, following its exploration at the beginning of this project in late 1966. During the summer of 1968, another previously undescribed frog (genus *Platymantis*) has been found to be apparently isolated on South Gigante Island (about 300 hectares). This island in Iloilo Province is situated on the west side of the Visayan Sea northeast of Panay.

Measurements of preserved specimens discussed in this paper were determined to the nearest 0.1 mm. with a Helios dial caliper. Snout-vent length is the distance from the tip of the snout to the vent with the specimen held flat, ventral surface down; the tibia length is the length of the bone of the lower leg; the head length is from the tip of the snout to the posterior edge of the tympanum; head breadth is measured at the widest point, usually the angle of the jaws; diameter of the eye is from the anterior to the posterior edge of the socket; first and fourth finger lengths are from the tip to the base of the subarticular tubercle; second and third finger lengths are from the tip to the base of the second subarticular tubercle; interorbital distance is the breadth of the bone between the eyes. Methods of determining such other measurements as breadth of digital disks or diameter of tympanum are probably not subject to much variation.

***Platymantis insulatus* Brown and Alcala, new species.**

**HOLOTYPE.** California Academy of Sciences register no. 117441, a mature female, collected on South Gigante Island, June, 1968, by Lawton Alcala and party.

**PARATYPES.** California Academy of Sciences nos. 117440, 117441, 119967, 119968, and 119969, and Museum of Comparative Zoology, Harvard University, no. 72946, all from the same locality as the holotype.

**DIAGNOSIS.** A moderately large, relatively slender species of *Platymantis*; mature specimens, based on the limited sample available, measuring about 38 to 45 mm. in snout-vent length; fingers and toes slender with dilated tips; those of third and fourth finger broadly dilated, of first and second fingers as well as toes moderately so; tympanum relatively large; dorsum granular without prominent folds or tubercles.

TABLE 1. Snout-vent lengths for males and females of *Platymantis guentheri*, *P. ingeri*, and *P. insulatus*.

		<i>Platymantis guentheri</i>	<i>Platymantis ingeri</i>	<i>Platymantis insulatus</i>
Snout-vent length	♂	27.4-35.5	24.0-30.5	37.8-41.7
		32.5	27.3	39.2
		23	16	3
	♀	38.3-49.1	27.0-33.8	40.2-45.5
		45.0	31.2	43.1
		20	25	3

DESCRIPTION. Size intermediate for known species of the genus, relatively large for Philippine species, snout-vent length about 38 to 42 mm. for 3 mature males and about 40 to 45½ for 3 mature females; habitus relatively slender; head relatively narrow; snout round-pointed; upper jaw protruding; canthus rostralis rounded; loreal slightly oblique; head about as broad as long; head-breadth 70 to 76 percent of tibia length; diameter of eye about equal to length of snout, and 37 to 41 percent of head breadth; tympanum large, its diameter about 48 to 60 percent of diameter of eye, and one to 1⅓ times the interorbital breadth, and 1¼ to 1¾ times the breadth of the third-finger disk (table 2); fold dorsal and posterior to tympanum; fingers relatively long and narrow without webs; first finger shorter than the second which is shorter than the fourth when adpressed (fig. 1); length of third finger 1½ to 1¾ times length of snout; tips of third and fourth fingers rather broadly dilated; of first and second scarcely to moderately so; subarticular tubercles well developed, rounded, supernumerary palmer tubercles prominent; inner and middle metacarpal tubercles large, oval; outer much smaller and low (fig. 1); hind limbs rather long; length of tibia more than half of snout-vent length; toes slender with minute web at base and moderately dilated tips; breadth of third toe disk equal to or slightly greater than breadth of second finger disk and about 60 to 75 percent of breadth of third finger disk (table 2); subarticular tubercles well developed; inner metatarsal tubercle large, about twice as long as broad; outer small and round; dorsum without folds but faintly to moderately granular; venter smooth; posterior thighs faintly granular.

MEASUREMENTS OF HOLOTYPE (in mm.). Snout-vent length 45.5; length of head 17.3; breadth of head 18.5; length of snout 6.5; diameter of eye 6.9; diameter of tympanum 3.55; interorbital breadth 3.35; length of third finger 9.3; breadth of disk of third finger 2.9; breadth of disk of second finger 1.8; length of hind limb 69.7; length of tibia 24.5; breadth of disk of third toe 1.8.

COLOR (in preservative). Dorsum and upper lateral surfaces grayish olive-green to live-brown, the lighter shaded specimens heavily mottled with large,

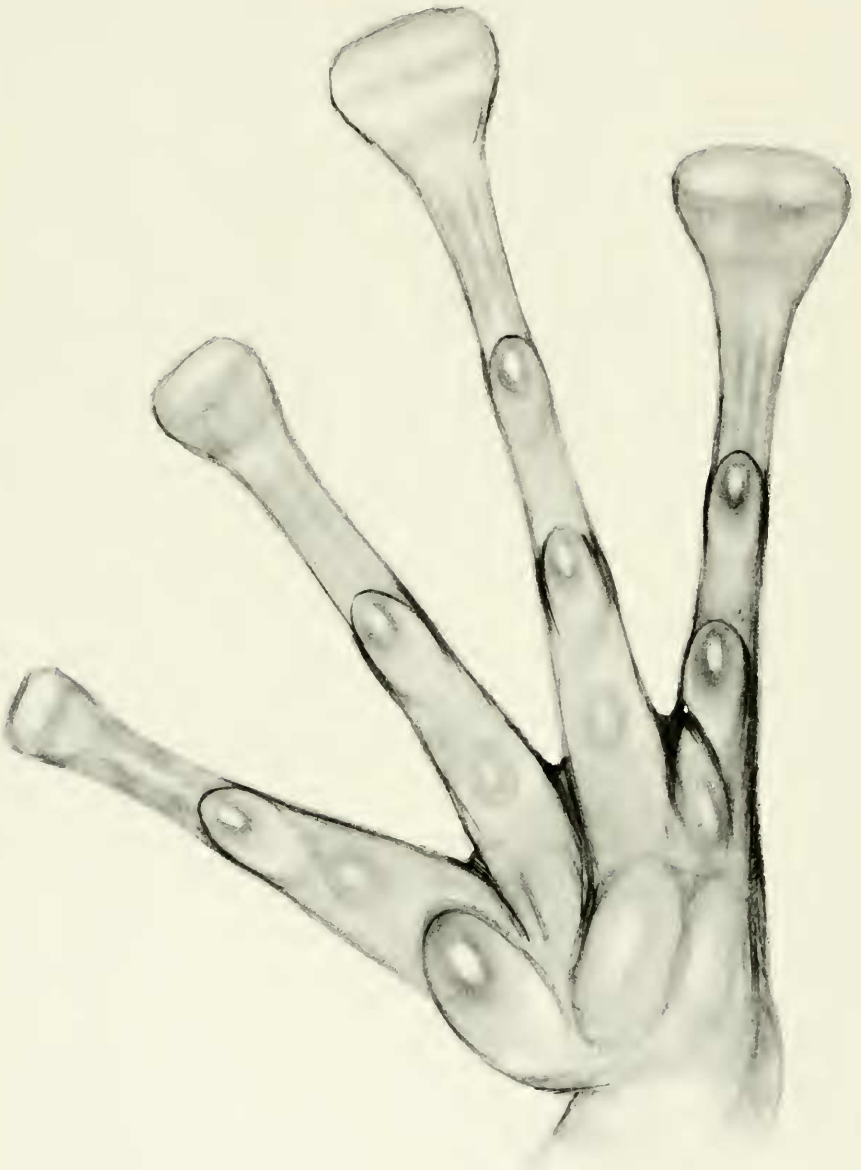


FIGURE 1. *Platymantis insulatus*, inferior view of hand.

TABLE 2. *Pertinent proportions for samples of Platymantis insulatus, P. guentheri, and P. ingeri.*

		<i>Platymantis guentheri</i>	<i>Platymantis ingeri</i>	<i>Platymantis insulatus</i>
<u>Length of tibia</u>	R =	0.485-0.541	0.562-0.626	0.527-0.550
<u>Snout-vent length</u>	M =	0.507	0.597	0.536
	N =	20	20	6
<u>Breadth of head</u>	R =	0.777-0.961	0.621-0.734	0.701-0.760
<u>Length of tibia</u>	M =	0.851	0.659	0.743
	N =	20	20	6
<u>Diameter of tympanum</u>	R =	0.368-0.478	0.457-0.533	0.485-0.605
<u>Diameter of eye</u>	M =	0.422	0.492	0.544
	N =	20	20	6
<u>Diameter of tympanum</u>	R =	0.581-0.917	0.690-0.896	1.06-1.33
<u>Breadth of interorbital</u>	M =	0.751	0.766	1.18
	N =	20	20	6
<u>Diameter of tympanum</u>	R =	0.628-0.865	1.00-1.33	1.22-1.71
<u>Breadth of 3rd finger disk</u>	M =	0.735	1.18	1.51
	N =	20	20	6
<u>Breadth of interorbital</u>	R =	0.840-1.26	1.29-1.74	1.16-1.38
<u>Breadth of 3rd finger disk</u>	M =	1.01	1.55	1.29
	N =	20	20	6
<u>Breadth of interorbital</u>	R =	0.450-0.674	0.563-0.714	0.439-0.487
<u>Diameter of eye</u>	M =	0.581	0.646	0.461
	N =	20	20	6
<u>Breadth of 3rd finger disk</u>	R =	0.359-0.513	0.300-0.385	0.274-0.312
<u>Length of 3rd finger</u>	M =	0.405	0.340	0.289
	N =	20	20	6
<u>Breadth of 2nd finger disk</u>	R =	0.732-0.902	0.703-0.833	0.627-0.739
<u>Breadth of 3rd finger disk</u>	M =	0.814	0.760	0.696
	N =	20	20	6
<u>Breadth of 3rd toe disk</u>	R =	0.467-0.555	0.703-0.900	0.621-0.739
<u>Breadth of 3rd finger disk</u>	M =	0.512	0.767	0.710
	N =	20	20	5
<u>Breadth of 3rd toe disk</u>	R =	0.568-0.719	0.928-1.08	1.00-1.10
<u>Breadth of 2nd finger disk</u>	M =	0.636	1.001	1.03
	N =	20	20	5

irregular, brownish or dark blotches; upper lips and loreals with irregular dark blotches or bands; hind limbs with rather narrow, irregular, dark cross bands; venter and under surface of hind limbs very heavily flecked with brown.

ETYMOLOGY. The species name, "*insulatus*," is from the Latin meaning isolated.

COMPARISONS. *Platymantis insulatus*, does not appear to be very closely related to any of the other Philippine species, nor to known extra-Philippine species. Based on Gorham's brief, synoptic key (Gorham, 1965) it would key out to that section which includes *P. cornutus*, *P. hazelae*, *P. polillensis*, and *P. subterrestris*; but in many characters seems quite unrelated to this group of small species, the fingers of which are rather dilated throughout their length in addition to the broadly dilated disks. In shape of the fingers and toes, and dilation of the toe and finger disks, it most closely resembles *P. guentheri* and *P. ingeri*. It differs from both in lacking the transverse proximal groove on the lower surface of the finger disks, the less dilated second finger disk, relative to the third finger disk (fig. 1; also see fig. 1, Brown and Alcala, 1963), the relatively larger tympanum, the narrower interorbital relative to the diameter of the eye (table 2), the lack of conspicuous dorsal folds or tubercles, as well as some features of the color pattern. From *P. guentheri* it also differs in the narrower third finger disk relative to the length of third finger or the breadth of first finger, broader third toe disk relative to the second and third finger disks (table 2). From *P. ingeri* it differs in being much larger in size and the somewhat shorter tibia relative to the snout-vent length (table 2).

HABITAT. This small series of frogs were taken within the entrances of two limestone caves, among the leaves and debris on the floor or on small shrubs growing just inside the entrance. The roof of one cave was partly gone, apparently having fallen in.

#### AMPHIBIAN FAUNA OF SOUTH GIGANTE ISLAND

South Gigante Island is volcanic, rising to a height of 300 to 350 feet with some raised limestone caves. The area is about 300 hectares. About half the island is uncultivated and covered by rocks and original forest. The amphibians which have been recorded from the island include only three species:

*Rana c. cancrivora*

*Platymantis insulatus*, new species

*Rhacophorus leucomystax quadrilineatus*

#### ACKNOWLEDGMENTS

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